

Inventor: Philip Eggers et al.
Application No. 10/621,839

Atty. Docket: A-1-9

AMENDMENTS

Please make the following amendments without prejudice or disclaimer of the cancelled subject matter.

In the Claims

Claims 1-51 (Cancelled)

Claim 52. (previously presented) A method for applying electrical energy to a body structure at a target site on or within a patient's body, the method comprising:

positioning an active electrode into at least close proximity with a body structure at the target site;

spacing a return electrode from the active electrode such that the return electrode does not contact the body structure; and

applying a high frequency voltage difference between the active and return electrodes such that an electrical current flows from the active electrode, through the target site, and to the return electrode, the high frequency voltage difference being sufficient to remove at least a portion of the body structure at the target site wherein said active electrode is arranged on a lateral surface of a shaft such that the active electrode may be traversed across the body structure upon longitudinal movement of the shaft.

Claim 53. (Previously presented) The method of claim 52 wherein the return electrode is spaced a distance of about 0.5 to 25 mm from the tissue structure during the applying step.

Claim 54. (Previously presented) The method of claim 52 wherein the return electrode is spaced a distance of about 1.0 to 5.0 mm from the tissue structure during the applying step.

Claim 55. (Previously presented) The method of claim 52 further comprising introducing an electrically conductive fluid to the target site such that the active and return electrodes contact

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the electrically conductive fluid and the electrically conductive fluid completes a conductive path between the active and return electrodes.

Claim 56. (Previously presented) The method of claim 55 wherein electric current flows substantially through the electrically conductive fluid while minimizing electric current flow passing through the body structure.

Claim 57. (Previously presented) The method of claim 55 wherein at least a portion of an electric current passes through the body structure.

Claim 58. (Previously presented) The method of claim 55 further comprising immersing the target site within a volume of the electrically conductive fluid and positioning the return electrode within the volume of electrically conductive fluid to generate a current flow path between the active and return electrodes.

Claim 59. (Previously presented) The method of claim 55 wherein the active electrode is introduced into a cavity in the patient's body flooded with the electrically conductive fluid.

Claim 60. (currently amended) A method for applying electrical energy to a body structure at a target site within a patient's body, the method comprising:

positioning an active electrode into at least close proximity with a body structure at the target site;

spacing a return electrode from the active electrode such that the return electrode does not contact the body structure; and

applying a high frequency voltage difference between the active and return electrodes such that an electrical current flows from the active electrode, through the target site, and to the return electrode, the high frequency voltage difference being sufficient to remove at least a portion of the body structure at the target site wherein the body cavity is selected from the

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group consisting essentially of the knee, shoulder, wrist, ankle, elbow, hip, foot, hand and spine; and

introducing an electrically conductive fluid to the target site such that the active and return electrodes contact the electrically conductive fluid and the electrically conductive fluid completes a conductive path between the active and return electrodes wherein the return electrode is spaced a distance of about 1.0 to 5.0 mm from the tissue structure during the applying step and wherein the active electrode is introduced into a cavity in the patient's body flooded with the electrically conductive fluid.

Claim 61. (cancelled)

Claim 62. (Previously presented) The method of claim 52 wherein the active electrode includes an array of electrically isolated active electrodes disposed near the distal end of an instrument shaft.

Claim 63. (Previously presented) The method of claim 55 wherein the electrically conductive fluid comprises isotonic saline.

Claim 64. (Previously presented) The method of claim 62 including independently controlling current flow from at least two of the active electrodes based on electrical impedance between each active electrode and the return electrode.

Claim 65. (Previously presented) The method of claim 52 further comprising wherein the return electrode is spaced from the active electrode by an electrically insulating member comprising an inorganic material.

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Claim 66. (Previously presented) The method of claim 65 wherein the inorganic material is selected from the group consisting essentially of ceramic, glass and glass/ceramic compositions.

Claim 67. (Previously presented) The method of claim 52 wherein the frequency of the applied voltage is about 50 kHz to about 400 MHz.

Claim 68. (Previously presented) The method of claim 52 wherein the high frequency voltage is greater than 10 volts [RMS] and less than 500 volts [RMS].

Claim 69. (Previously presented) The method of claim 52 wherein the active electrode and the return electrode are configured to effect the electrical breakdown of tissue in the immediate vicinity of the active electrode when high frequency voltage is applied between the active electrode and the return electrode in the presence of electrically conducting fluid.

Claim 70. (Previously presented) The method of claim 52 further comprising generating a high electric field intensity at a distal portion of the active electrode.

Claim 71. (Previously presented) The method of claim 52 wherein the power applied to the active electrode is controlled based on the electrical impedance between the active electrode and the return electrode.

Claim 72. (Previously presented) The method of claim 71 further comprising limiting power to the active electrode when the electrical impedance is less than a threshold value.

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Claim 73. (Previously presented) The method of claim 52 wherein temperature at the target site is measured by a temperature sensor adjacent to the active electrode and power delivery to the active electrode is limited if the measured temperature exceeds a threshold value.

Claim 74. (Previously presented) The method of claim 52 wherein the return electrode has a substantially greater exposed surface area than the active electrode.

Claim 75. (Previously presented) The method of claim 52 wherein the return electrode has an exposed surface area at least 5 times greater than an exposed surface area of the active electrode.

Claim 76. (Previously presented) The method of claim 52 wherein the return electrode is arranged circumferentially on said shaft.